SEQUENCE LISTING

<110> Murphy, Dennis
      Reid, John

<120> ALPHA GALACTOSIDASES AND METHODS FOR
      MAKING AND USING THEM (Amended)

<130> 09010-004005

<140> US 09/886,400
<141> 2001-06-20

<150> US 09/407,806
<151> 1999-09-28

<150> US 08/613,220
<151> 1996-03-08

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<170> FastSEQ for Windows Version 4.0

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<212> DNA
<213> Artificial Sequence

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<212> DNA
<213> Thermococcus alcaliphilus

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ccttttgggc tcaacataac gggctatacc ttaaagttcc tcccgaagga tattatagac   180
ctcgttaaag ggggcatcgc gagtgacctg atagagataa tcggaacgag ctacacgcac   240
gcaatactcc ccctcctgcc gcttagcaga gtagaagcac aagttcagag agatagggaa   300

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gttaaggaag agctcttcga ggtttctcca aagggattct ggctgccaga gctcgcctat      360
gacccgataa tccctgccat actgaaggac aacggttatg agtatctatt cgccgacggg      420
gaggcgatgc ttttctcagc tcatctcaac tcggcgataa agccaattaa accgctctat      480
ccacacctta taaaggccca aagggaaaag cgctttaggt acatcagcta tctccttggt      540
ctcagggagc ttaggaaggc gataaagctc gtttttgaag gtaaggtaac gctaaaggca      600
gtcaaagaca tcgaagccgt acccgtttgg gtggccgtga acacggctgt aatgctcggc      660
atcggaaggc ttcctcttat gaatcctaag aaagtggcga gctggataga ggacaaggac      720
aacattcttc tatacggcac cgatatagag ttcattggct ataggacat tgcaggctac       780
agaatgagtg ttgagggatt attagaggtt atagacgagc tcaactcgga actgtgcctt      840
ccctcagagc tgaagcacag tggaagggag ctctacttac ggacttcgag ttgggcacca      900
gataagagct tgaggatatg gagagaggac gaagggaacg caagacttaa tatgctgtcc      960
tacaatatga ggggcgaact cgccttttta gccgagaaca gcgatgcaag gggatgggag     1020
cccctccctg agaggaggct ggatgccttc cggcgatat ataacgattg gaggggtgaa      1080
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                20                  25                  30
Glu Thr Leu Ile Lys Glu Glu Ile Pro Phe Gly Leu Asn Ile Thr Gly
                35                  40                  45
Tyr Thr Leu Lys Phe Leu Pro Lys Asp Ile Ile Asp Leu Val Lys Gly
        50                  55                  60
Gly Ile Ala Ser Asp Leu Ile Glu Ile Ile Gly Thr Ser Tyr Thr His
65                  70                  75                  80
Ala Ile Leu Pro Leu Leu Pro Leu Ser Arg Val Glu Ala Gln Val Gln
                85                  90                  95
Arg Asp Arg Glu Val Lys Glu Glu Leu Phe Glu Val Ser Pro Lys Gly
               100                 105                 110
Phe Trp Leu Pro Glu Leu Ala Tyr Asp Pro Ile Ile Pro Ala Ile Leu
           115                 120                 125
Lys Asp Asn Gly Tyr Glu Tyr Leu Phe Ala Asp Gly Glu Ala Met Leu
       130                 135                 140
Phe Ser Ala His Leu Asn Ser Ala Ile Lys Pro Ile Lys Pro Leu Tyr
145                 150                 155                 160
Pro His Leu Ile Lys Ala Gln Arg Glu Lys Arg Phe Arg Tyr Ile Ser
               165                 170                 175
Tyr Leu Leu Gly Leu Arg Glu Leu Arg Lys Ala Ile Lys Leu Val Phe
           180                 185                 190
Glu Gly Lys Val Thr Leu Lys Ala Val Lys Asp Ile Glu Ala Val Pro
       195                 200                 205
Val Trp Val Ala Val Asn Thr Ala Val Met Leu Gly Ile Gly Arg Leu
   210                 215                 220
Pro Leu Met Asn Pro Lys Lys Val Ala Ser Trp Ile Glu Asp Lys Asp
225                 230                 235                 240
Asn Ile Leu Leu Tyr Gly Thr Asp Ile Glu Phe Ile Gly Tyr Arg Asp
               245                 250                 255
Ile Ala Gly Tyr Arg Met Ser Val Glu Gly Leu Leu Glu Val Ile Asp
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Glu Leu Asn Ser Glu Leu Cys Leu Pro Ser Glu Leu Lys His Ser Gly
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305             310             315                 320
Tyr Asn Met Arg Gly Glu Leu Ala Phe Leu Ala Glu Asn Ser Asp Ala
            325             330                 335
Arg Gly Trp Glu Pro Leu Pro Glu Arg Arg Leu Asp Ala Phe Arg Ala
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Ile Tyr Asn Asp Trp Arg Gly Glu Asn Gly Glu Pro
        355             360
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